

REPORT OF AERIAL DETECTION SURVEY
IN NORTHERN VIRGINIA

By

Charles W. Dull

INTRODUCTION

An aerial survey and subsequent ground checks were conducted on 13 counties of Northern Virginia (Fig. 1) during the week of June 19, 1979. Approximately 3,968,000 acres were surveyed as a cooperative effort between the Virginia Division of Forestry (Cal Morris and John Pugh) and Forest Insect and Disease Management (C. W. Dull).

The purpose of the aerial survey was to detect the presence of harmful forest insect and disease activity. This aerial survey was planned to coincide with periods of maximum gypsy moth defoliation in an effort to detect populations of the gypsy moth if it existed. On three areas between Bluemont, Virginia and the West Virginia border, 4,700 acres within the survey area were aerially treated in May with two applications of Dimilin. The spray area was approximately 30 miles north of the Shenandoah National Park and 50 miles northeast of the George Washington National Forest.

METHODS

Standard sketchmap procedures were employed flying in a Cessna 182 at 1000 feet above the terrain. Particular emphasis was placed upon detection of defoliation in and adjacent to the area sprayed for gypsy moth control along the West Virginia and Virginia border on Blue Ridge Mountain. Most of the aerial survey activity was concentrated along the forested ridges.

RESULTS

Hardwood defoliation in and adjacent to the areas treated for gypsy moth control was not observed.

Moderate defoliation (50-75%) caused by the Virginia pine sawfly, *Neodiprion pratti pratti* (Dyar), was evident in Virginia pine and pitch pine stands in areas near Front Royal, especially in the Fort Valley area on Massanutten Mountain. Sawfly larvae had pupated and were not observed during ground checks. However, the sawfly pupae (Fig. 3) were numerous in the litter and soil under the defoliated pines.

Damage caused by the periodic cicada, *Magicicada septendecim* (L.) (Fig. 4) was widely distributed throughout the survey area. Wilted, damaged twigs resulting from oviposition activity in hardwood stands could be seen from the air (Fig. 5) in areas of outbreak populations. Branch flagging (Fig. 6) and breakage (Fig. 7) at damaged points were observed during ground checks.

Locust leaf miner defoliation (Fig. 8) was observed in stands of black locust throughout the survey area.

CONCLUSIONS AND DISCUSSION

Defoliation caused by the gypsy moth was not observed during this aerial survey. Light defoliation caused by low density populations of the gypsy moth is normally difficult to detect. However, over large expanses of hardwood forest in close proximity to the expanding front of the general infestation, an aerial survey may reveal an infestation which may otherwise remain undetected.

The Virginia Division of Forestry and the Virginia Department of Agriculture have did not detect gypsy moth larvae or pupae from tree bands. Male moths have not been recovered from pheromone traps placed in the spray area as of July. However, one gypsy moth larvae was found under a tree band in West Virginia adjacent to the spray area.

Aerial surveys to detect gypsy moth in Northern Virginia should continue on an annual basis.

Growth loss due to pine sawfly defoliation will occur, but tree mortality should not be serious.

Damage caused by the periodic cicada should not cause tree mortality or significant growth loss. However, branch flagging along roadsides and in forested communities is very noticeable. The tremendous number of adult cicada and the loud, constant noise they produce will subside in July.

For any additional information, contact

Forest Insect and Disease Management Unit, S&PF
USFS - Southeastern Area

Northgate Office Park, Room 2103
3620 Interstate 85, N. E.
Doraville, GA 30340
Tel: 404-221-4796

or

P. O. Box 5895
Asheville, NC 28802
Tel: 704-258-2850
Ext. 625

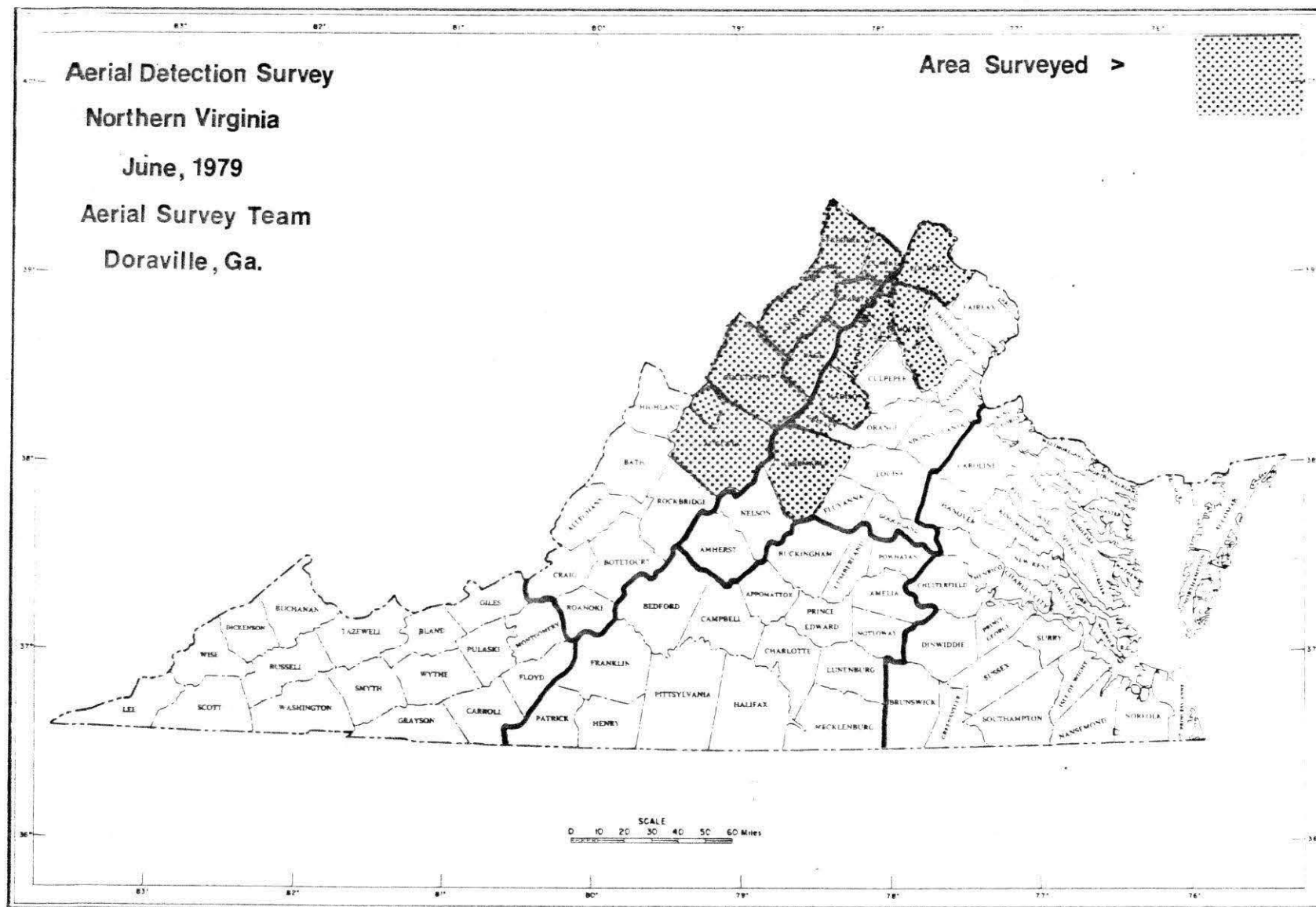


Figure 1. Survey area for forest insect and disease detection in Northern Virginia, June, 1979.



Figure 2. Pine defoliation caused by the Virginia pine sawfly.



Figure 3. Sawfly cocoons found in the soil under defoliated pine stands.



Figure 4. Periodic cicadia adult also known as the 17 year locust.



Figure 5. Aerial view of damaged hardwoods caused by the periodic cicada.



Figure 6. Branch flagging as a results of periodic cicada oviposition damage.



Figure 7. Branch breakage at damaged point following periodic cicada egg laying activity.



Figure 8. Damage to black locust foliage caused by the locust leaf miner.